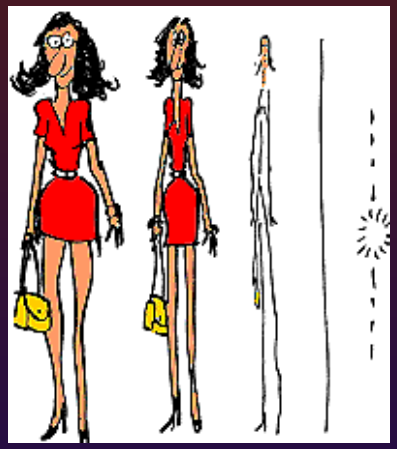
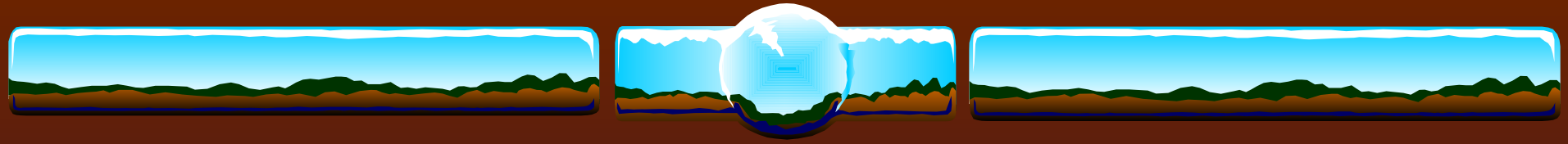
EATING DISORDERS

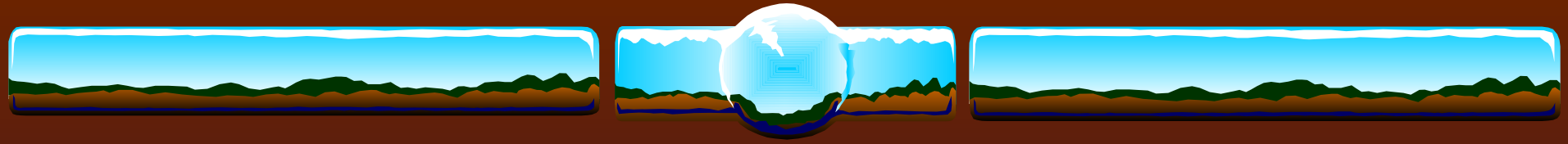


JOEL SHAW, MD
DEPARTMENT OF FAMILY MEDICINE
DEWIT ARMY COMMUNITY HOSPITAL



OBJECTIVES

- Discuss the signs and symptoms of eating disorders, the appropriate evaluation, and treatment options:
  - Anorexia nervosa
  - Bulimia nervosa
  - Binge Eating Disorder
  - Eating disorder NOS



CASE 1

- 18 y.o. female with no significant PMHx, presents with 5 month h/o weight loss
- Just completed her 1st year of college with a 3.8 GPA
- She became a vegetarian after hearing a lecture on cholesterol and heart disease in her biology class, and began reducing the fat in her diet
- She is 64 inches tall and has lost 22 pounds to a weight of 95 pounds

Case 1

- She drinks 2 cups of coffee and 3 cans of diet cola per day
- She eats ½ bagel for breakfast, an apple for lunch, and a salad with kidney beans and fruit for dinner
- Denies laxative use. BM every 4-5 days
- She runs 4 miles a day, and does 100 sit-up nightly
- Her LMP was 6 months ago
- She denies ever being sexually active

Case 1

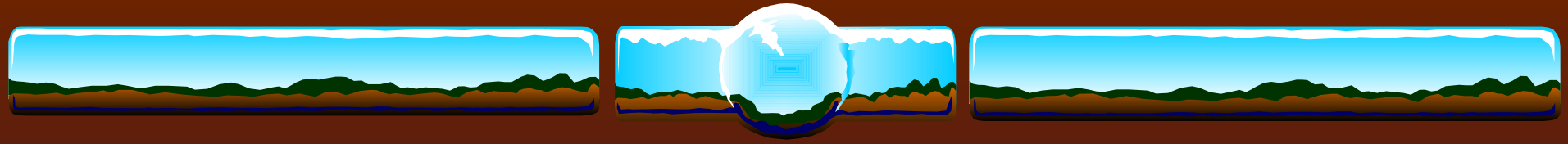
- Constantly feeling cold
- Dizzy when stands up rapidly
- Hair is dry
- Feels bloated after meals
- Thinks that her thighs and stomach are too big, despite her parents' protests
- Doesn't believe that she has a problem

DSM-IV CRITERIA-Anorexia Nervosa

- Refusal to maintain weight within a normal range for height and age (more than 15 percent below ideal body weight)
- Fear of weight gain
- Severe body image disturbance in which body image is the predominant measure of self-worth with denial of the seriousness of the illness
- In postmenarchal females, absence of the menstrual cycle, or amenorrhea (greater than three cycles).

SUBTYPES

- Restricting
  - Restriction of intake to reduce weight
- Binge eating/purging
  - May binge and/or purge to control weight
  - Considered anorexic if she is 15% below ideal body weight



SIGNS AND SYMPTOMS

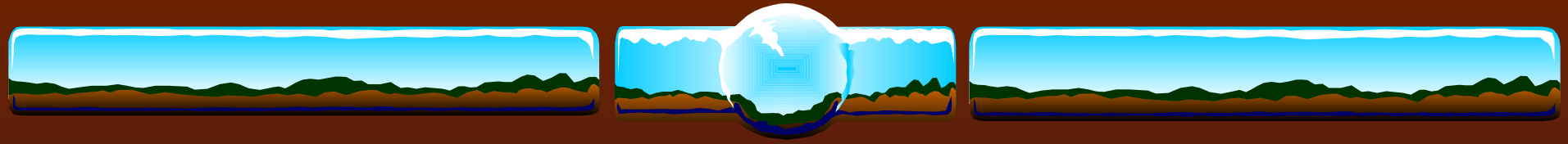
- Dry skin
- Cold intolerance
- Blue hands and feet
- Constipation
- Bloating
- Delayed puberty
- Primary or secondary amenorrhea
- Nerve compression
- Fainting
- Orthostatic hypotension
- Lanugo hair
- Scalp hair loss
- Early satiety
- Weakness, fatigue
- Short stature
- Osteopenia
- Breast atrophy
- Atrophic vaginitis
- Pitting edema
- Cardiac murmurs
- Sinus brady
- hypothermia

CASE 2

- 20 y.o. female presents for evaluation of hematemesis
- Admits to self-induced vomiting for the past 3 years
- 62 inches tall, 63 kg
- Gorges and vomits 3-5 times per week
- Uncontrollable eating binges
- Feels guilty
- Smokes 1 pack cigarettes per day
- Gets drunk weekly
- Irregular menses
- Has not lost any weight

DSM-IV CRITERIA- Bulimia

- Episodes of binge eating with a sense of loss of control
- Binge eating is followed by compensatory behavior of the purging type (self-induced vomiting, laxative abuse, diuretic abuse) or nonpurging type (excessive exercise, fasting, or strict diets).
- Binges and the resulting compensatory behavior must occur a minimum of two times per week for three months
- Dissatisfaction with body shape and weight



SIGNS AND SYMPTOMS

- Mouth sores
- Pharyngeal trauma
- Dental caries
- Heartburn, chest pain
- Esophageal rupture
- Impulsivity:
  - Stealing
  - Alcohol abuse
  - Drugs/tobacco
- Muscle cramps
- Weakness
- Bloody diarrhea
- Bleeding or easy bruising
- Irregular periods
- Fainting
- Swollen parotid glands
- hypotension

Binge Eating Disorder RESEARCH CRITERIA

- Eating, in a discrete period of time, an amount of food that is larger than most people would eat in a similar period
- Occurs 2 days per week for a six month duration
- Associated with a lack of control and with distress over the binge eating

BED

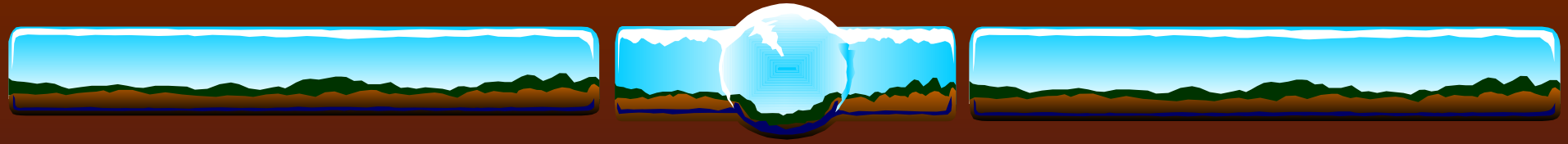
- Must have at least 3 of the 5 criteria
  - Eating much more rapidly than normal
  - Eating until uncomfortably full
  - Eating large amounts of food when not feeling physically hungry
  - Eating alone because of embarrassment
  - Feeling disgusted, depressed or very guilty over overeating

Eating Disorder NOS DSM-IV CRITERIA

- **1. All criteria for anorexia nervosa except has regular menses**
- **2. All criteria for anorexia nervosa except weight still in normal range**
- **3. All criteria for bulimia nervosa except binges < twice a week or for < 3 months**
- **4. Patients with normal body weight who regularly engage in inappropriate compensatory behavior after eating small amounts of food (ie, self-induced vomiting after eating two cookies)**
- **5. A patient who repeatedly chews and spits out large amounts of food without swallowing**

EPIDEMIOLOGY

- Anorexia
  - Incidence rates have increased in the past 25 years
  - Affects 1% of adolescent females
  - Rates for men only 10% of those for women
  - Seen in patients as young as 6
- Bulimia
  - Occurs in 1-5% of high school girls
  - As high as 19% in college women

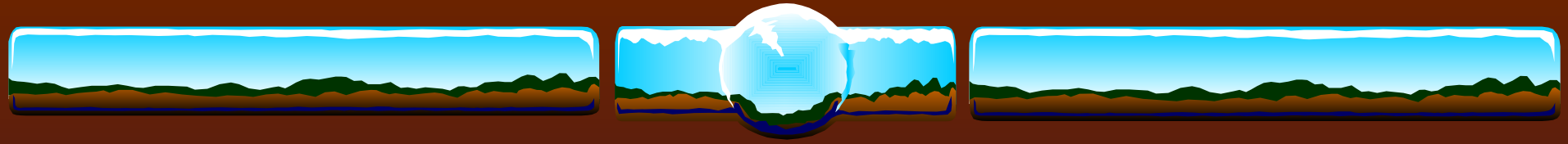


Epidemiology

- Eating Disorder NOS (ED-NOS)
  - Occurs in 3-5% of women between the ages of 15 and 30 in Western countries
  - As minority culture groups assimilate into American society, rates increase
- Binge Eating Disorder (BED)
  - Occurs more commonly in women
  - Depending on population surveyed, can vary from 3% to 30%

PATHOGENESIS

- No consensus on precise cause
- Combination of psychological, biological, family, genetic, environmental and social factors



ASSOCIATED FACTORS

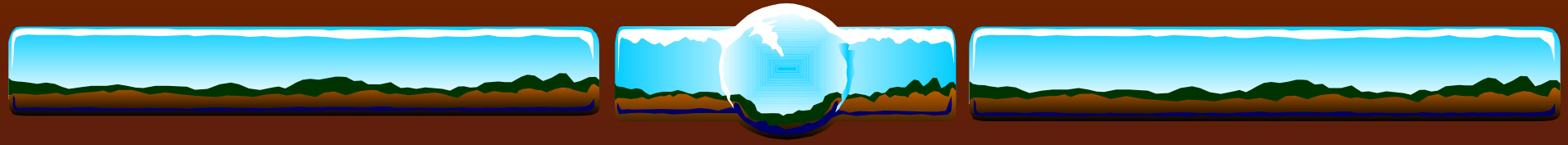
- History of dieting in adolescent children
- Childhood preoccupation with a thin body and social pressure about weight
- Sports and artistic endeavors in which leanness is emphasized
- Women whose first degree relatives have eating disorders– 6 to 10 fold increased risk for developing an eating disorder

ASSOCIATED PSYCHIATRIC CONDITIONS

- affective disorders
- anxiety disorders
- obsessive-compulsive disorder
- personality disorders
- substance abuse.

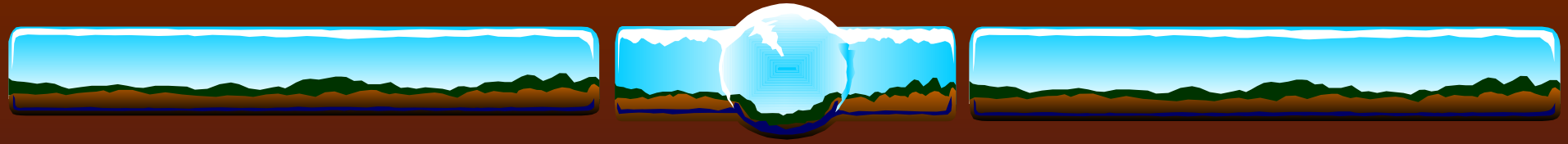
SCREENING TOOLS: SCOFF Questionnaire

- Do you make yourself Sick because you feel uncomfortably full?
- Do you worry you have lost Control over how much you eat?
- Have you recently lost more than One stone (14 pounds or 6.35 kg) in a three month period?
- Do you believe yourself to be Fat when others say you are too thin?
- Would you say that Food dominates your life?



SCREENING TOOL: ESP

- Are you satisfied with your eating patterns? (No is abnormal)
- Do you ever eat in secret? (Yes is abnormal)
- Does your weight affect the way you feel about yourself? (Yes is abnormal)
- Have any members of your family suffered with an eating disorder? (Yes is abnormal)
- Do you currently suffer with or have you ever suffered in the past with an eating disorder? (Yes is abnormal)



HISTORY

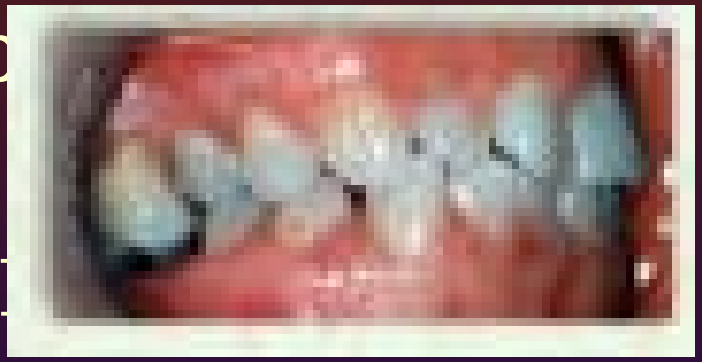
- Maximum height and weight
- Minimum height and weight
- Exercise habits: intensity, hours per week
- Stress levels
- Habits and behaviors: smoking, alcohol, drugs, sexual activity
- Eating attitudes and behaviors
- Review of systems

PHYSICAL EXAM--anorexia

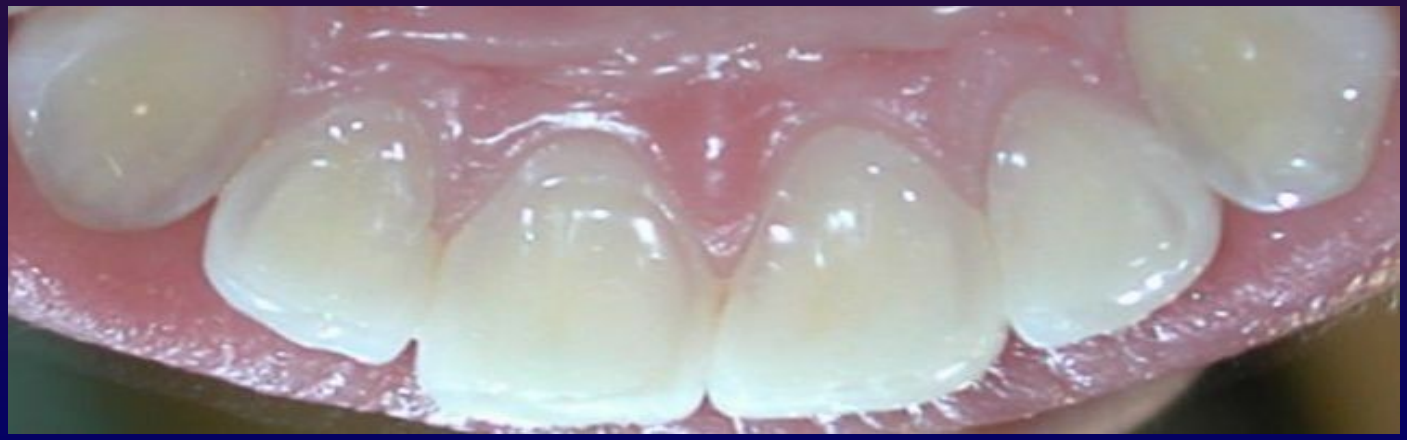
- Vital signs to include orthostatics
- Skin and extremity evaluation
  - Dryness, bruising, lanugo
- Cardiac exam
  - Bradycardia, arrhythmia, MVP
- Abdominal exam
- Neuro exam
  - Evaluate for other causes of weight loss or vomiting (brain tumor)

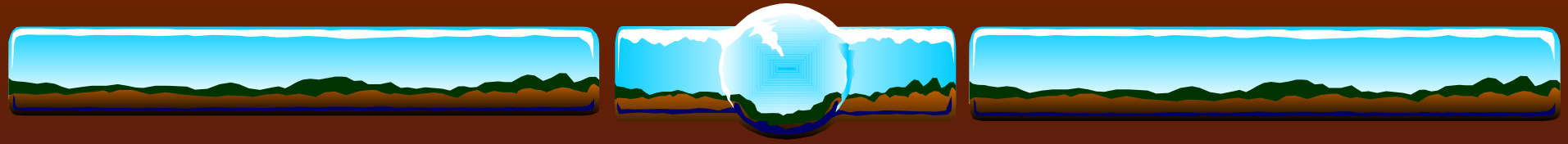
PHYSICAL EXAM: bulimia

- All previous elements p



  - Parotid gland hypertrop
  - Erosion of the teeth enamel



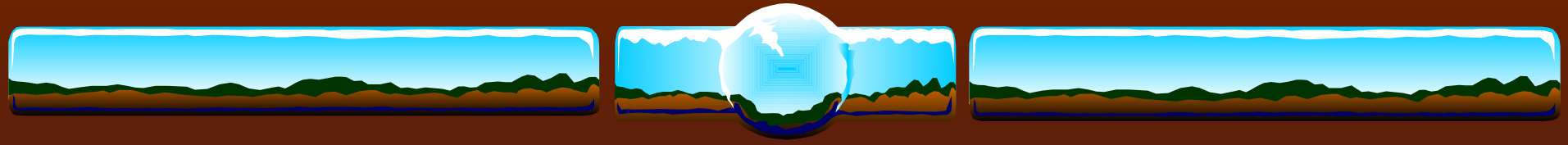


LABORATORY ASSESSMENT

- CBC: anemia
- Electrolytes, BUN/Cr
- Mg, PO4, Calcium
- Albumin, serum protein
- B-HCG
- UA: specific gravity
- Thyroid function tests
- Serum prolactin
- FSH
- Bone density

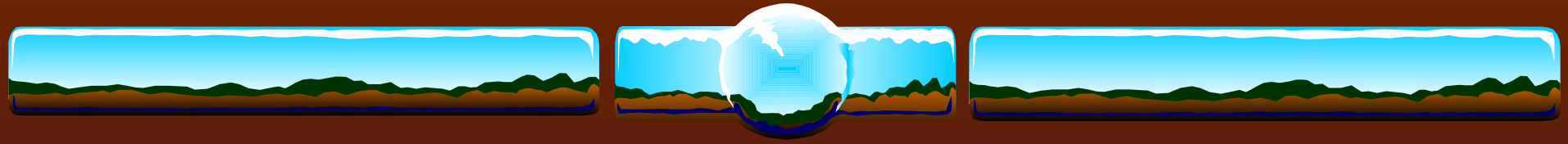
DIFFERENTIAL DIAGNOSIS

- New onset diabetes
- Adrenal insufficiency
- Primary depression with anorexia
- Inflammatory bowel disease
- Abdominal masses
- Central nervous system lesions



COMPLICATIONS

- Fluid and electrolyte imbalance
  - Hypokalemia
  - Hyponatremia
  - Hypochloremic alkalosis
  - Elevated BUN
  - Inability to concentrate urine
  - Decreased GFR
  - ketonuria

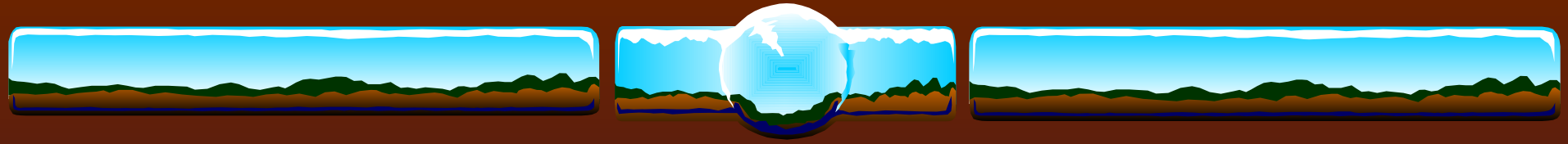


- Cardiovascular
  - Bradycardia
  - Orthostatic hypotension
  - Dysrhythmias
  - EKG abnormalities
    - Prolonged QT
    - T-wave abnormalities
    - Conduction defects
    - Low voltage
  - Ipecac cardiomyopathy
  - MFP
  - CHF
  - Pericardial effusion

- Gastrointestinal
  - Constipation
  - Bloody diarrhea
  - Delayed gastric emptying
  - Intestinal atony
  - Esophagitis
  - Mallory-Weiss tears
  - Esophageal or stomach rupture
  - Barrett esophagus
  - Fatty infiltration or necrosis of liver
  - Acute pancreatitis
  - Gallstones
  - Superior mesenteric artery syndrome

- Dermatologic
  - Acrocyanosis
  - Hypercarotenemia
  - Brittle hair and nails
  - Lanugo
  - Hair loss
  - Russell’s sign: calluses over the knuckles
  - Pitting edema

- Endocrine
  - Growth retardation and short stature
  - Delayed puberty
  - Amenorrhea
  - Low T3 syndrome
  - Partial diabetes insipidus
  - Hypercortisolism
- Skeletal
  - Osteopenia
  - fractures



- Hematologic
  - Bone marrow suppression
    - Mild anemia
    - Leukopenia
    - Thrombocytopenia
  - Low ESR
  - Impaired cell-mediated immunity
- Neurologic
  - Seizures
  - Myopathy
  - Peripheral neuropathy
  - Cortical atrophy

OSTEOPENIA

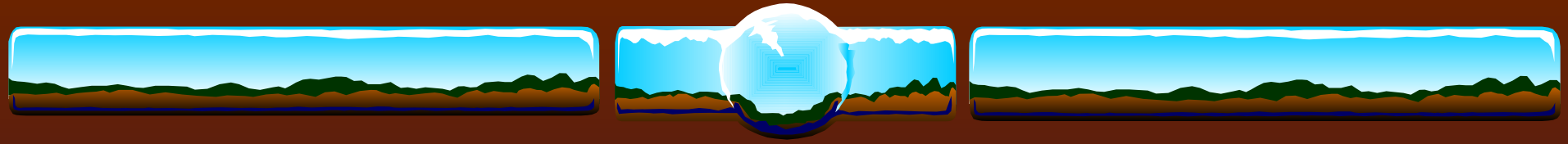
- One of the most severe complications
- Difficult to reverse
- Treatment:
  - Weight gain
  - 1200-1500 mg/day of elemental calcium
  - Multivitamin with 400 IU vitamin D
  - Consider estrogen/progesterone replacement

AMENORRHEA

- Secondary amenorrhea affects more than 90% of patients with anorexia
- Caused by low levels of FSH and LH
- Withdrawal bleeding with progesterone challenge does not occur due to the hypoestrogenic state
- Menses resumes with 6 months of achieving 90% of IBW

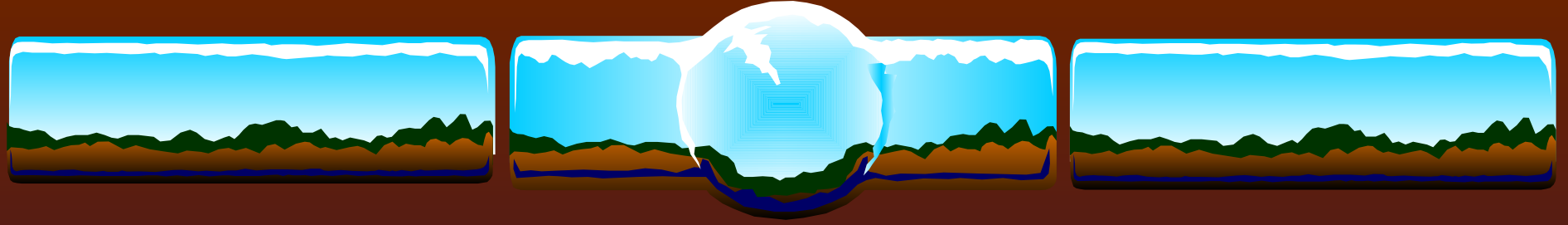
CARDIAC CHANGES

- MVP: occurs in 32-60% of patients with anorexia
- Long QT: one study found as many as 33% of patients
  - Independent marker for arrhythmia
  - Immediate attention if patient is bradycardic and underweight as well
- Risk of heart failure is greatest in the first 2 weeks of refeeding
  - Reduced cardiac contractility and refeeding edema
  - Slow refeeding, repletion of PO4, avoidance of sodium intake



REFEEDING SYNDROME

- Severe hypophosphatemia
  - Cardiovascular collapse
  - Rhabdomyolysis
  - Seizures
  - Delirium
  - Start refeeding at 20 kcals/kg and increase by 100-200 kcals/day
- Wernicke’s encephalopathy
  - Daily MVI with thiamine
- Constipation
  - metoclopromide



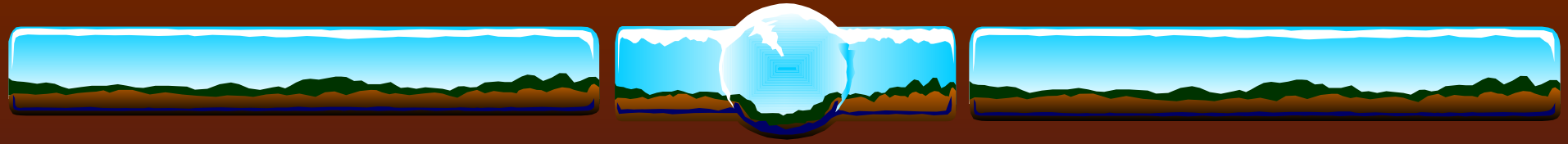
TREATMENT AND OUTCOME

ANOREXIA

- Cognitive behavioral therapy
  - Emphasizes the relationship of thoughts and feelings to behavior
  - Limited efficacy
- Interdisciplinary care team
  - Medical provider
  - Dietician with experience in ED
  - Mental health professional

MEDICATIONS

- Overall, disappointing results
- Effective only for treating comorbid conditions of depression and OCD
- Anxiolytics may be helpful before meals to suppress the anxiety associated with eating
- Case reports in the literature supporting the use of olanzapine



HOSPITALIZATION

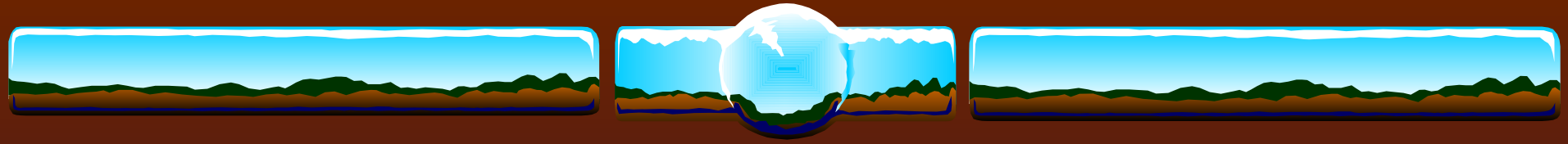
- Severe malnutrition (< 75% IBW)
- Dehydration
- Electrolyte disturbances
- Cardiac dysrhythmia
- Arrested growth and development
- Physiologic instability
- Failure of outpatient treatment
- Acute psychiatric emergencies
- Comorbid conditions that interfere with the treatment of the ED

NUTRITION

- Goal: regain to goal of 90-92% of IBW
- Inpatient treatment varies by facility
  - Oral liquid nutrition
  - Nasogastric tube feedings
  - Gradual caloric increase with “regular” food
  - Parenteral nutrition rarely indicated

OUTCOME

- 50% good outcome
  - Return of menses and weight gain
- 25% intermediate outcome
  - Some weight regained
- 25% poor outcome
  - Associated with later age of onset
  - Longer duration of illness
  - Lower minimal weight
  - Overall mortality rate: 6.6%



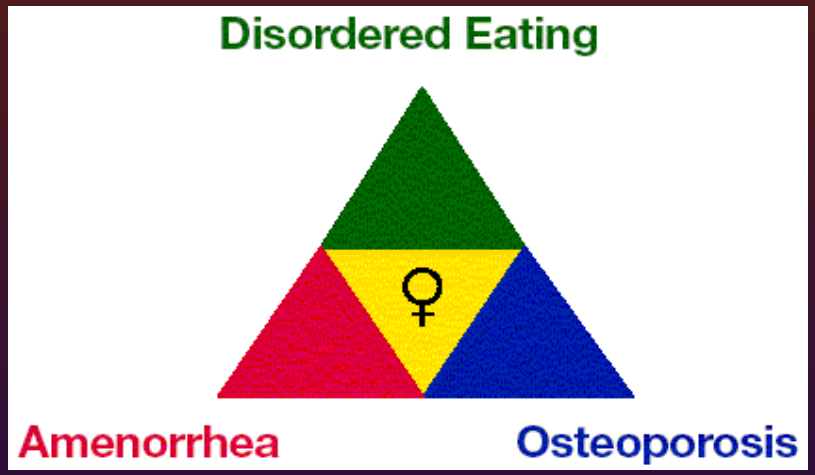
BULIMIA

- Cognitive behavioral therapy is effective
- Pharmacotherapy—high success rate
  - Fluoxetine—studies reveal up to a 67% reduction in binge eating and a 56% reduction in vomiting
  - TCAs
  - Topiramate—reduced binge eating by 94% and average wt. loss of 6.2 kg
  - Ondansetron, 24 mg/day

BINGE EATING DISORDER

- Cognitive behavioral therapy
- Pharmacotherapy

The Female Athlete's Triad

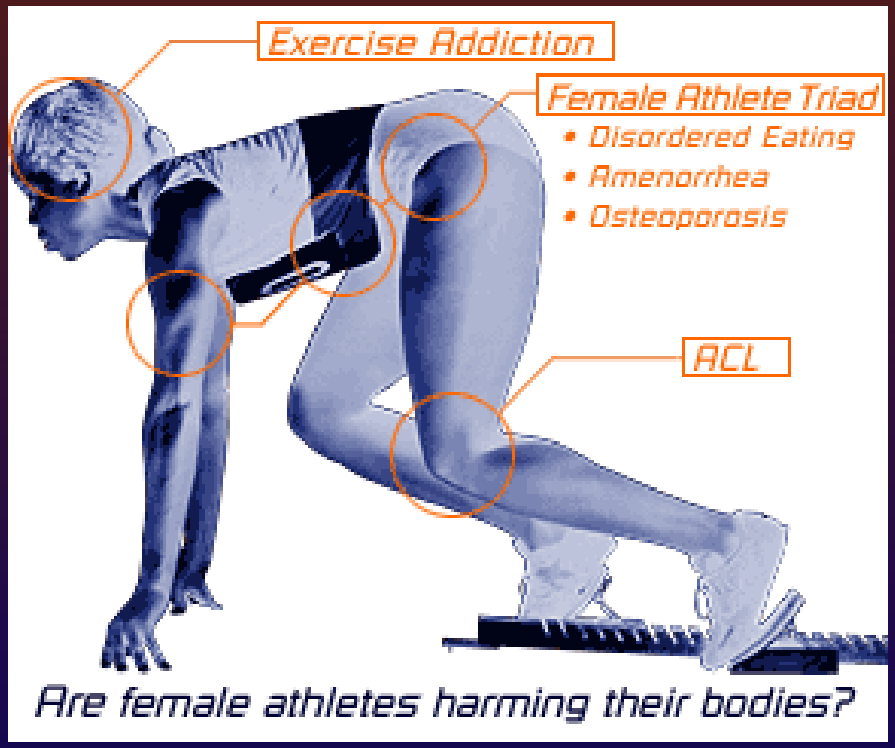


- The Triad
  - Eating Disorders
  - Stress Fractures
  - Amenorrhea
- At risk
  - Appearance Related Sports
  - High Performance Sports

The Female Athlete's Triad

What to look for:

- Weight
- Heart Rate of 40-50
- Hypotension
- Hypothermia
- Parotid swelling
- Poor dentition
- Overuse injuries, especially stress fractures



The Female Athlete's Triad

- Treatments—multidisciplinary effort
  - Estrogen Replacement
    - 3 years post-menarche and older than 16 years old
    - Or, if history of stress fracture
  - Decrease energy expenditure
  - Nutritional consultation
  - Calcium with vitamin D
  - Psychological counseling.
  - NOT NSAIDs